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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/654,976

09/05/2003

Kumiko Kado

031119

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02/10/2006

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WASHINGTON, DC 20006

EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/654,976

Applicant(s)

KADO ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/22/03.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### **Claim Rejections - 35 USC § 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura et al. (U.S. 6,713,160) in view of either Igarashi et al. (U.S. 5,882,755) or Sato et al. (U.S. 5,281,340).

Kitamura et al. disclose aqueous dispersion of inorganic pigment-cationic resin composite fine particles which are agglomerates of the cationic resin and the inorganic pigment. The inorganic pigment includes silica that has average primary particle size of 3-40 nm. The agglomerate has secondary particle size of 10-1000 nm. The ratio of pigment to cationic resin is 100/2 to 100/30. The weight average molecular weight of the cationic resin is greater than 100,000. There is also disclosed ink jet recording sheet comprising substrate and coating obtained from the above aqueous dispersion and binder (col.2, lines 20-43, col.3, lines 4-7, col.4, lines 3-13, col.5, lines 4-21 and 41-60, col.6, lines 29-65. col.8, lines 43-46, and col.20, line 55-col.21, line 20).

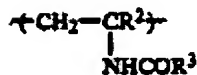
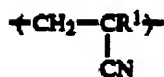
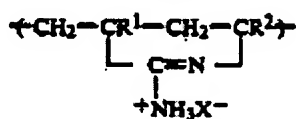
The difference between Kitamura et al. and the present claimed invention is the requirement in the claims of specific type of cationic resin.

Igarashi et al., which is drawn to coating for ink jet recording sheet, disclose the use of cationic resin that is polyvinylamine type resin known under the tradename SC 700. Given that this is the identical tradename to the cationic resin utilized in the present invention, it is clear that the cationic resin of Igarashi et al. would intrinsically possess structure as set forth in present claims 1-3. The motivation for using such cationic resin is to improve water resistance and suppress deterioration of bond strength of the ink jet recording sheet. Igarashi et al. also disclose the equivalence and interchangeability of using this polyvinylamine type cationic resin, as

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presently claimed, with using polycondensate of dicyandiamide, as disclosed by Kitamura et al. (col.3, lines 56-60, col.7, lines 22-31, and col.18, lines 49-60).

Alternatively, Sato et al., which is drawn to cationic resin as paper-treating agent, disclose the use of cationic resin comprising units of:



in amounts of 20-90 mol%, 0-70 mol%, and 0-2 mol%, respectively. In another embodiment, the cationic resin contains 50-80 mol%, 0-48 mol%, and 2-20 mol%, respectively, of the above three units. The motivation for using such cationic resin is that it has good storage stability. It is further disclosed that such cationic resin is superior to using ammonium salts of dialkylaminoalkyl(meth)acrylate as disclosed by Kitamura et al. (col.1, lines 6-8, 10-14, and 20-25, col.1, line 53-col.2, line 12, col.4, lines 21-33 and 65-68, and col.5, lines 24-26).

In light of the motivation for using specific cationic resins disclosed by Igarashi et al. or Sato et al. as described above, it therefore would have been obvious to one of ordinary skill in

the art to use the polyvinylamine type resin of Igarashi et al. or the cationic resin of Sato et al. as the cationic resin in Kitamura et al., and thereby arrive at the claimed invention.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura et al. in view of Igarashi et al. as applied to claims 1-7 and 9 above, and further in view of Nakatani et al. (U.S. 2002/0045034).

The difference between Kitamura et al. in view of Igarashi et al. and the present claimed invention is the requirement in the claims of specific type of silica.

Nakatani et al., which is drawn to coating for ink jet recording sheet, disclose the use of fumed silica possessing surface area of 100-400 m<sup>2</sup>/g in order to produce high density prints and clear images (paragraphs 36-37 and 40-41).

In light of the motivation for using fumed silica disclosed by Nakatani et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use fumed silica in Kitamura et al. in order to produce coating that produces high density prints and clear images, and thereby arrive at the claimed invention.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

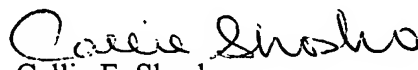
JP 08039927 and JP 11058934 each disclose cationic resin comprising cyclic amidine structure as presently claimed, however, there is no disclosure of inorganic pigment-cationic resin composite particles as required in the present claims.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
2/4/06